

Practical Considerations of Soils, Plant and Organic Matter, and Hydrology for BMP's for Crop Production and Sediment Control

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Important sources of nonpoint water pollution include nutrients, pesticides, and sediment. Reducing the load of these contaminants in ground and surface water can be managed by using several practical and well-researched applied practices.

For the past six years, University of Idaho Elmore County Extension conducted studies of nitrogen mineralization and watermark sensors and Hansen meters in irrigated crop production. Understanding of soil moisture levels, nitrogen mineralization, the timing of nitrogen release, and its utilization in the total nitrogen pool has a pronounced role in the development of best management practices for minimizing nitrate in our water resources.

Understanding the soil food web (biological communities in the soil) and its role in crop production, reclamation, and restoration has been showing very promising outcomes in enhancing soil quality for crop production and re vegetation in highly disturbed soils. Understanding the physical and chemical characteristics of the soils, knowing and using the topsoil and the right soil amendments, and evaluating the characteristics that make a plant suitable for stabilizing soil surfaces have shown very consistent and promising results in sediment control.

Overall, the viewpoint from many experts in this field highlights the missing links in soil, plant, and water relationships. Overcoming these barriers will positively impact the success of BMP's in crop production and other sediment control practices.